ANNUAL REPORT
1980/81

Canada - Nova Scotia
Flood Damage Reduction Program

INTRODUCTION

Canadians suffer needless flood damage losses amounting to millions of dollars each year. Increased losses could be avoided, if wise uses were made of flood-prone lands. Damage to existing structures could be reduced by appropriate flood proofing or other measures.

The purpose of the Canada/Nova Scotia Flood Damage Reduction Program is to limit and reduce the damage caused by floods, and thus reduce the losses to citizens and the costs to governments of compensating flood victims, and undertaking uneconomical flood control works.

Flood risk maps showing the extent of designated flood risk areas are intended to be a principal means of helping people avoid building vulnerable structures in such areas. A further step in the Program will involve studies of solutions or remedies to flood damage situations. Such remedies may include flood control measures as well as other means of avoiding damage such as flood proofing, avoidance of risk areas, or contingency (flood fighting) plans.

The Governments of Nova Scotia and Canada for their part have agreed not to build or assist undertakings in designated floodways, and they will flood-proof their own new buildings in floodway fringe areas.

The governments will not pay compensation to flood victims who build in designated flood risk areas in defiance of identified risks.

Flood Flows Study

A **Regional Flood Frequency Analysis** initiated during fiscal year 1979-80 was completed by the consultants in May, 1980. This work enables engineers studying flood risk areas to determine flood flows from streams in mainland Nova Scotia.

Truro Area

The Truro Area Hydrotechnical Study, being part of the mapping work, was continued with activity both on the site and in engineering offices. Some delay in this study has been experienced due to a lack of suitable events from which to obtain measurements for calibrating the computer models. A very complicated tidal/fresh water interchange which occurs in the estuary has required extensive work and some research by the engineers conducting the study. These two factors have combined to cause the project to fall behind schedule and to increase projected costs. The Base maps of the flood plain and immediate area were completed.

Bedford/Sackville Area

The Hydrotechnical Study of the Sackville River upon which flood risk mapping will be based was nearly complete at the end of the year. All data are collected and most computations are made. Report writing and the presentation of results on large-scale maps are all that remain for completion of the main stem study. A separate study will be done to determine the extent of flood risk on the Little Sackville River, and it will include a study of measures to reduce the risks. Some preliminary work, establishment of a stream gauging station and consideration of recording precipitation gauge sites, has been done in relation to this latter study. Base mapping for the area was completed at a scale of 1:2000, with 1 m contours.

Antigonish Area

A contract was made, and work begun on an hydrotechnical study of three rivers in Antigonish. This will determine the extent of flooding with a 1% and 5% annual probability, as elsewhere. Measuring devices have been installed, including a recording rain gauge to measure rainfall intensity, and preparatory work has been done for measuring stream flows. It now remains for the area to experience a significant runoff event that will be measured and used in calibrating the computer models. Base maps at a scale of 1:2000, with 1 m contours, were produced from aerial photography taken in the spring.

Stellarton/New Glasgow Area

Similarly a contract has been made and work is in progress on a study of the East River, Pictou County, in the vicinity of New Glasgow and Stellarton. No useful high flow data has yet been obtained but devices are in place awaiting a suitable event to measure. Base maps, at a scale of 1:2000, with 1 m contours, were produced under contract, from photography taken in the spring.

Public Information

A brochure for public distribution describing the program for Nova Scotia was produced late in the year.

Meetings with several municipal councils and committees have been attended by the Program Manager and other Committee members. These have served to raise the awareness of the program and its objectives in Truro, Sackville and Antigonish.

Media coverage of council meetings and planning and flood committee meetings has resulted in local broadcast, and published interviews in Truro, Bridgewater and the Bedford/Sackville area.

Continued showing on television of the film strips promoting the programs aims has been noted. This national activity is useful to the Nova Scotia program and has received favourable comment from councillors.

A series of newspaper articles prepared by a member of the Technical Committee, was published in the Truro Daily News.

Several floods, induced by ice jams, caused damage in North River, Truro, Bridgewater and in Kentville. Considerable publicity resulted, indicating there is interest and public concern about flood damage even though the floods would not be classed as severe.

Expenditures

This year $268,500 was spent although more was originally budgeted on the assumption that high flows would be measured and used for the calibration. To date a total of $532,000 has been spent on the program. Costs for the work this year have been proportioned to both the Studies (of remedies) Agreement and Mapping Agreement, since current activities serve both purposes.

A review of expenditures to date and the budgeted funds in the Mapping and the Studies Agreements, indicates a need to revise the funding and schedule of work. Funds have been spent more quickly than originally planned in 1978, due in large part to inflation. In 1978 when the Agreements were signed there was very little information upon which to estimate study costs and the level of effort that would be required for the hydrotechnical work being undertaken. Costs were roughly estimated and the budgets are in 1978 dollars. To obtain benefits from the program quickly, work has been undertaken early in the life of the Agreements. It now appears funds will run out before the Agreements end in June 1983. The work plan for 1981-82, in fact, proposes to use all the remaining funds, although only two areas will have remedy studies started, and designation will be achieved for the Sackville River main stem flood plain only.

Program Expenditures

Project	% complete	Spent to date	Spent this year
RFFA	100	$ 82,600	$ 15,600
Truro			
maps	100	$ 33,000	
hydotechnical	60	$108,600	$ 71,600
Bedford/Sackville			
maps	100	$ 36,000	
hydrotechnical	90	$ 37,900	$ 11,800
Little Sackville	7	$ 5,000	$ 5,000
Antigonish			
maps	100	$ 27,000	$ 27,000
hydrotechnical	25	$ 29,500	$ 29,500
New Glasgow/Stellarton			
maps	100	$ 17,000	$ 17,000
hydrotechnical	30	$ 22,800	$ 22,800
Technical Service			
E.M. & R.	N.A.	$ 6,600	$ 6,600
Salaries	N.A.	$100,000	$ 51,700
Overhead Expenses	N.A.	$ 26,000	$ 10,000
TOTAL		$532,000	$268,500

Planning

A review of Schedule A of the mapping agreement has been started with the objective of determining if flood damage problems are severe enough to require action under the program in each of the areas listed.

Agreement Revisions

The Mapping Agreement expires in June, 1983, and provides for $600,000 to be spent by both governments. It also envisages mapping of up to twelve flood risk areas. Present information indicates there is a need to extend the Agreement to June, 1988, and to increase funding by $800,000 in order to map the areas still considered to warrant such attention.

The Studies (of remedies) Agreement also expires in June, 1983 and it provides for $300,000 to be spent. Not all the areas to be studied are specified, only Truro and Bedford/Sackville are named, but they will likely include most or all of the mapped areas. Thus Antigonish, Stellarton, Kentville, Middleton and possibly Bridgetown will require consideration in proposing a revised program budget. It is now estimated that approximately $700,000 in additional funds will be needed. Likewise the term of the agreement will need to be extended to 1988.

Prospects for 1981-82

Completion of the first four priority flood risk mapping studies is expected next year. Recommendations for designations will be made and a flood risk area designated for the Sackville River flood plain. Studies to identify solutions to flood damage risk in Bedford/Sackville and the Mill Brook area of Kentville will begin. An hydrotechnical study to identify flood risk areas, and formulate a storm water management plan for the Little Sackville River, will be started.

The work proposed for next year 1981/82 is expected to use all remaining funds authorized by the present agreements. The estimate is $368,000.

For further information on the Flood Damage Reduction Program in Nova Scotia, contact Mr. H.T. Doane, Program Manager, Canada/Nova Scotia Flood Damage Reduction Program, P.O. Box 2107, Halifax, Nova Scotia, B3J 3B7. Telephone: (902) 424-5300 local 203.